

Xylon d.o.o.

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Features

- Small form factor 155mmx115mm (4"x3")
- Supports Xilinx Spartan®-3E
3S250E/500E/1200E 256-pin FPGAs
(3S250E/3S500E available on demand)
- 8 MB of NOR FLASH
- 32 MB/32-bit wide SDRAM running at 133MHz
- 2 GB SD card
- Up to two simultaneous video inputs
selectable from four CVBS or two S-Video
PAL/NTSC/SECAM inputs
- One LVDS channel (clock + 3 data pairs)
directly connected to FPGA
- High speed LVDS Gbit/s digital transceiver
- 8 bit general purpose I/O
- Optional direct access to 26 FPGA input, and
2 input/output pins
- Touch screen controller
- CAN interface, and single wire CAN interface
- RS232 interface
- Interface to external Bluetooth module or micro SD port
- iPod control interface
- Four stereo line inputs
- Microphone input
- 2 Audio line outputs
- 2 Headphones outputs
- Two stereo IR headphone audio outputs



Figure 1: logiCRAFT3

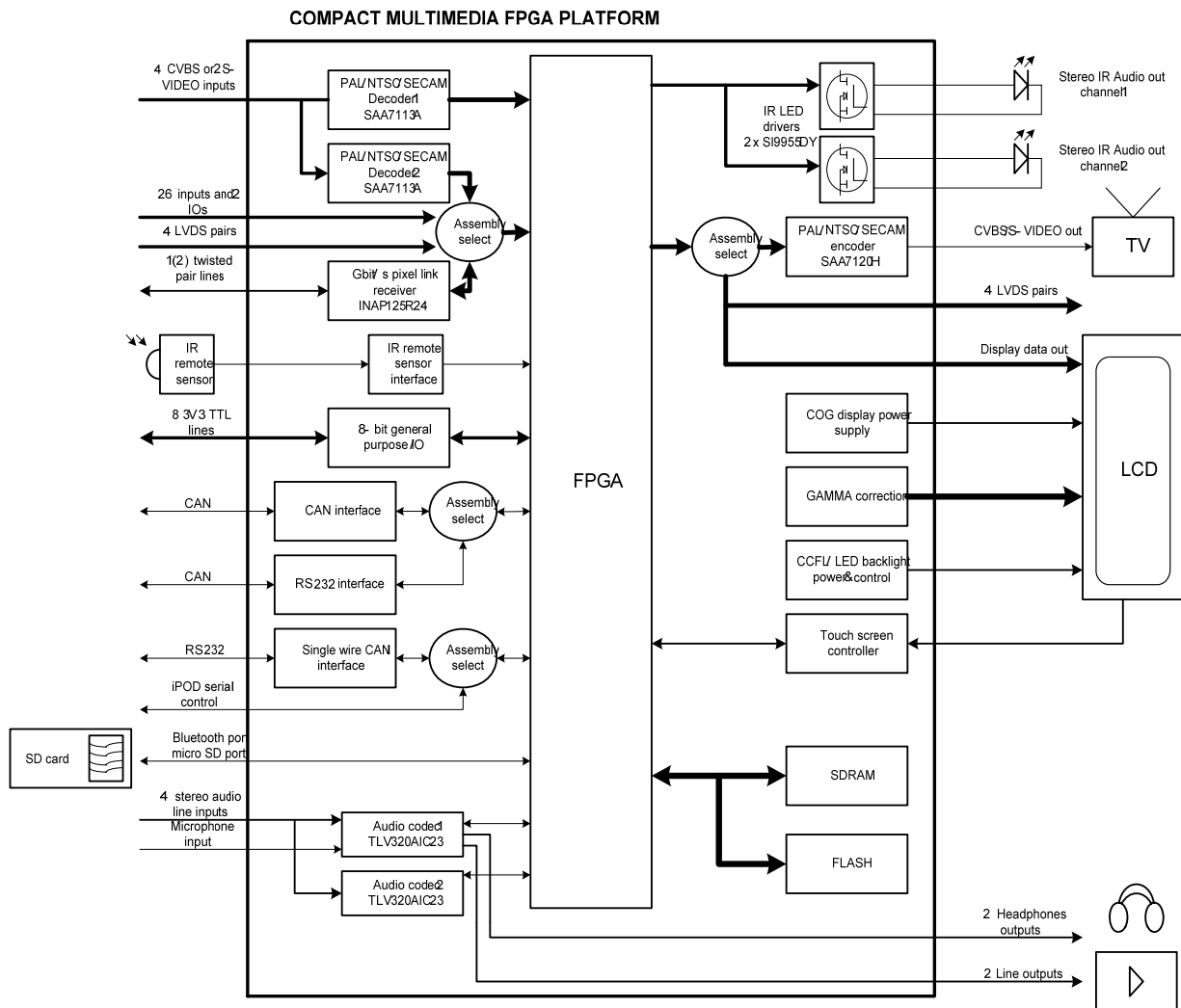


Figure 2: logiCRAFT3 Block Diagram

Features (continued)

- Video output configurable as:
 - CVBS / S-VIDEO PAL/NTSC/SECAM output
 - One LVDS channel (clock + 3 data pairs) directly from FPGA
 - Digital RGB interface
- Power supply for COG displays including GAMMA correction and VCOM circuits
- Power and control output for CCFL backlight inverters, and LCD backlights

Applications

- Automotive
- Medical
- Industrial
- Military/Aerospace, and others

General Description

The logiCRAFT3 Compact Multimedia Display Development Platform (Fig.1) is Xilinx Spartan3E based board primarily aimed at the automotive market, including applications such as navigation, infotainment, rear seat entertainment (RSE), and driver assistance (DAS). Other multimedia applications are equally applicable, such as medical, and measurement instrumentation or factory automation applications. The platform is designed to support a wide variety of audio and video sources, and to be able to handle a variety of display types. With several standard communication interfaces you can easily integrate the logiCRAFT3 platform into a larger system. The logiCRAFT3 provides plenty of different type memory devices.

Figure 2 shows logiCRAFT3 functional blocks. A wide variety of system interfaces such as A/V I/Os, line drivers, general purpose I/Os, COG power supplies, etc., makes this platform extremely versatile. The logiCRAFT3, with its support for a high speed Gbit/s digital link (Inova APIX®), dramatically reduces the complexity and cost of the end application wiring. You may transfer all digital video, audio and bi-directional control data using only two twisted pair lines. You may also discard the power cable, since the platform can be powered through one of the two twisted pair lines.

Growing popularity of Apple iPod and Bluetooth devices is also recognized. You may connect the iPod device to the logiCRAFT3, or enable Bluetooth with the addition of a Bluetooth module.

All the platform features are supported by flexible IP cores from Xylon and Xilinx IP portfolios. That, in turn, enables fast development cycles for even most demanding applications lowering development and production costs.

Package Content

As can be seen in the Figure 2, some logiCRAFT3 features share the same FPGA pins and have to be selected during board assembly, or may be configured afterwards by user. Also, the board can be fitted with FPGA chips of different sizes in order to optimize it for particular application. Xylon offers four different logiCRAFT3 configurations: A, B, C and D (the default configuration).

Common features for all configurations

- Board power supply
- Power supply for COG displays including GAMMA correction and VCOM circuits
- CCFL/LED backlight power & control
- IR remote sensor interface
- 8-bit general purpose I/O
- Bluetooth port (for connecting Bluetooth RF module) or micro SD port
- iPod control interface
- Two TLV320AIC23 audio CODECs (microphone input – CODEC 1 only, no connector, PCB pads only, line outputs – no connectors, PCB pads only, two headphones outputs – no connectors, PCB pads only)
- 2 stereo IR audio channels
- Touch screen controller – TSC2003
- User configurable outputs – PAL/NTSC/SECAM output via SAA7120H encoder, or digital RGB interface, or one LVDS channel (clock + 3 data pairs)
- RS232 interface
- FLASH 8MB – M29W640FB70N6E

Configuration A additional features

- Spartan-3E 3S1200E FPGA
- Two PAL/NTSC/SECAM decoders SAA7113A connected to 4 onboard RC connectors (inputs can be configured as 4 composite or 2 S-Video)
- 4 stereo line inputs – 2 inputs with RC connectors and 2 with PCB pads only
- CAN interface (FPGA pin resources shared with RS232 interface – user selectable)
- Single wire CAN interface (FPGA pin resources shared with iPod control interface – user selectable)
- DRAM 32MB

Configuration B additional features

- Spartan-3E 3S1200E FPGA
- One PAL/NTSC/SECAM decoder SAA7113A with 4 composite or 2 S-Video inputs
- 4 stereo line inputs – 2 inputs with RC connectors and 2 with PCB pads only
- 1GB/s high speed digital link
- CAN interface (FPGA pin resources shared with RS232 interface – user selectable)
- Single wire CAN interface (FPGA pin resources shared with iPod control interface – user selectable)
- DRAM 32MB

Configuration C additional features

- Spartan-3E 3S250E FPGA
- 1GB/s high speed digital link

Configuration D additional features

- Spartan-3E 3S1200E FPGA
- One PAL/NTSC/SECAM decoder SAA7113A with 4 composite or 2 S-Video inputs
- Direct access to 26 FPGA input, and 2 input/output pins
- 4 stereo line inputs – 2 inputs with RC connectors and 2 with PCB pads only
- CAN interface (FPGA pin resources shared with RS232 interface – user selectable)
- Single wire CAN interface (FPGA pin resources shared with iPod control interface – user selectable)
- DRAM 32MB

Recommended Design Experience

The user should have experience in the following areas:

- Xilinx design tools
- C programming
- Good HW/SW designing practices
- ModelSim

The logicBRICKS™ IP cores are fully supported by the Xilinx Platform Studio and the EDK, and their use does not require any particular skills beyond general Xilinx tools knowledge.

Related Xylon Products

Xylon logicBRICKS™ IP cores can be evaluated on Xylon logiCRAFT3 platform, which is designed especially for developers working in the fields of multimedia and infotainment. The logiCRAFT3 demonstrates modularity on all levels: software, board, FPGA, and IP cores. The platform makes an excellent development tool appropriate for the development of different embedded systems, including systems with strong graphics capabilities.

To learn more about the logiCRAFT3 and other Xylon development platforms, contact Xylon or visit the web:

Email: info@logicbricks.com

URL: www.logicbricks.com/html/evaluation_boards.htm

Ordering Information

This product is available directly from Xylon. Please contact Xylon for pricing and additional information about this product using the contact information on the front page of this datasheet.

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Related Information

Xilinx Programmable Logic

For information on Xilinx programmable logic or development system software, contact your local Xilinx sales office, or:

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Revision History

Version	Date	Note
1.00.	02.04.2009	Initial Xylon release - new doc template logiCRAFT3 with SD Card reader and 32MB SDRAM